GEORGIA INSTITUTE OF TECHNOLOGY
Engineering Experiment Station

PROJECT INITIATION

Date: March 21, 1973

Project Title: Scaled Antenna Performance Analysis (S)

Project No.: A-1514

Project Director: Mr. Neal T. Alexander

Sponsor: Headquarters, Armament Development & Test Center (AFSC); Eglin AFB, Fla.

Effective . . . . February 15, 1973 . . . . . Estimated to run until: June 30, 1973 . . . . . .

Type Agreement: Contract No. F08635-73-C-0095 . . . . . Amount: $ 49,796 . . . . . .

REPORTS REQUIRED: Monthly Status Reports; Final Technical Report.

SPONSOR CONTACT PERSONS:

Technical Matters	Contractual Matters
(individual not named)	Mrs. Preta
ADTC/TS	ADTC/PPRN
Eglin AFB, Fla. 32542	Eglin AFB, Fla. 32542
	Phone (904) 882-2871

Defense Priority Rating: DO-A7 under DMS Reg. 1

Assigned to . . Sensor Systems . . . . . Division

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	Other_____

RA-62

GEORGIA INSTITUTE OF TECHNOLOGY
Engineering Experiment Station

PROJECT TERMINATION

Date November 2, 1973

PROJECT TITLE: Scaled Antenna Performance Analysis

PROJECT NO: A-1514

PROJECT DIRECTOR: Mr. Neal T. Alexander

SPONSOR: Hq., Armament Development & Test Center (AFSC); Eglin AFB, Florida

TERMINATION EFFECTIVE: October 17, 1973 (Final Report of Inventions)

CHARGES SHOULD CLEAR ACCOUNTING BY: October 31, 1973

contract closeout items remaining: Final Invoice and Closing Documents
Final Report of Inventions
Gov't. Property Inventory & Cert.
Classified Material Cert.

SENSOR SYSTEMS DIVISION

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A-1514

ENGINEERING EXPERIMENT STATION
GEORGIA INSTITUTE OF TECHNOLOGY • ATLANTA, GEORGIA 30332

20 March 1973

Armament Development and Test Center
Eglin Air Force Base, Florida 32542
Attn: TSGPE

Reference: Contract F08635-73-C-0095

Subject: Technical Status Report No. 1 covering the period 15 February 1973 thru 14 March 1973

Gentlemen:

The following is a summary of the status of the above-referenced program being conducted by Georgia Tech.

On 21 February, N. T. Alexander, R. C. Johnson, R. M. Goodman, Jr., and J. M. Akridge visited Eglin AFB, Florida, for technical conferences with ADTC and FTD personnel. A portion of the technical data requested during that visit has been received at Georgia Tech and evaluation of this data has begun.

Initial antenna pattern predictions based on the limited available data are in progress. The various parameters (main reflector diameter, subreflector diameter, focal length, conical scan angle, etc.) of candidate antenna configurations are being varied and the resulting patterns analyzed so that appropriate bounds may be placed on the parameters. Once optimal values of these parameters have been determined, evaluation of system performance and trade-off analysis will begin.

During the next report period, it is anticipated that the initial antenna analysis will be completed and preliminary system analysis begun.

Respectfully submitted,

Neal T. Alexander
Project Director

NTA: cm

Approved:

Robert M. Goodman, Jr.
Chief, Sensor Systems Division

cc: N. T. Alexander
R. M. Goodman, Jr.
File: Project A-1514

ENGINEERING EXPERIMENT STATION
GEORGIA INSTITUTE OF TECHNOLOGY • ATLANTA, GEORGIA 30332

April 27, 1973

Armament Development and Test Center
Eglin Air Force Base, Florida 32542
Attention: TSFPE

Reference: Contract F08635-73-C-0095

Subject: Technical Status Report No. 2 covering the period 15 March 1973 through 14 April 1973

Gentlemen:

The following is a summary of the status of the above-referenced program being conducted by Georgia Tech.

During this report period, prediction of antenna patterns was completed and system analysis based on these patterns was begun. The performance items listed in the Statement of Work (SOW) are being evaluated with particular emphasis placed on the effect of the various antenna pattern characteristics (beamwidth, sidelobe level, gain, etc.) on these items. An analysis of the effects of trade-offs between the various radar system characteristics on overall system performance has begun.

On 12 April 1973, John Weyland of ADTC and Walt Simshauser and Major Rod Pejsar of FTD visited Georgia Tech for discussion of the performance of the contract. Initial results of the system analysis were presented and several items in the SOW were clarified during the meeting.

During the next report period, the major effort will be the evaluation of the effectiveness of various electronic techniques discussed during the above-referenced meeting.

Respectfully submitted,

Neal T. Alexander
Project Director

dah

Approved:

R. M. Goodman, Jr.
Chief, Sensor Systems Division

cc: N. T. Alexander, R. M. Goodman, Jr., Project A-1514

A-1514

ENGINEERING EXPERIMENT STATION

GEORGIA INSTITUTE OF TECHNOLOGY • ATLANTA, GEORGIA 30332

29 May 1973

Armament Development and Test Center
Eglin Air Force Base, Florida 32542
Attention: TSFPE

Reference: Contract F08635-73-C-0095

Subject: Technical Status Report No. 3 covering the period 15 April 1973 through 14 May 1973

Gentlemen:

The following is a summary of the status of the above-referenced program being conducted by Georgia Tech.

During the report period an analysis to determine the effect of trade-offs between the various system parameters on overall system performance was completed. In this analysis, certain aspects of the radar system performance were optimized with respect to the baseline system and the effect on other performance parameters evaluated.

Evaluation of the effectiveness of the various electronic techniques specified in the SOW continues with emphasis placed on evaluation of the effects of antenna pattern parameters on these techniques.

Results of the above analyses were to be presented to ADTC personnel at a meeting on 16 May 1973 at Eglin, AFB.

During the next report period, the above-mentioned effectiveness evaluation will be completed and preparation of the Final Technical Report begun.

Respectfully submitted,

Neal T. Alexander
Project Director

dah

Approved:

R. M. Goodman, Jr.
Chief, Sensor Systems Division

cc: N. T. Alexander, R. M. Goodman, Jr., Project A-1514